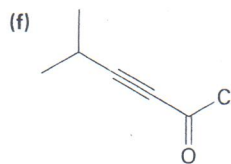
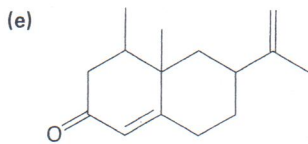
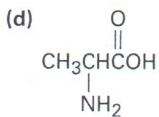
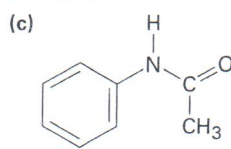
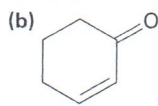
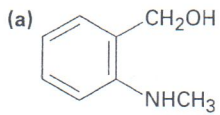


Gruppi funzionali

3.22 Localizzare e identificare i gruppi funzionali nelle seguenti molecole.



3.23 Proporre le strutture che corrispondono alle seguenti descrizioni:

- (a) Un chetone a cinque atomi di carbonio (b) Un'ammide a quattro atomi di carbonio
(c) Un estere a cinque atomi di carbonio (d) Un'aldeide aromatica
(e) Un chetoestere (f) Un ammino alcol

3.24 Proporre le strutture che corrispondono alle seguenti descrizioni:

- (a) Un chetone, C_4H_8O (b) Un nitrile, C_5H_9N
(c) Una dialdeide, $C_4H_6O_2$ (d) Un bromoalchene, $C_6H_{11}Br$
(e) Un alcano, C_6H_{14} (f) Un idrocarburo saturo ciclico, C_6H_{12}
(g) Un diene (dialchene), C_5H_8 (h) Un chetoalchene, C_5H_8O

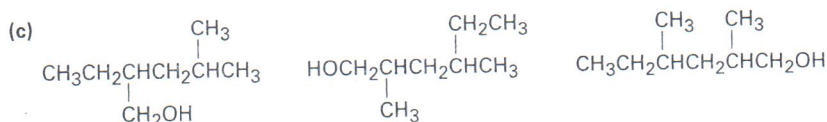
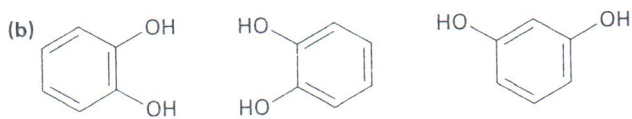
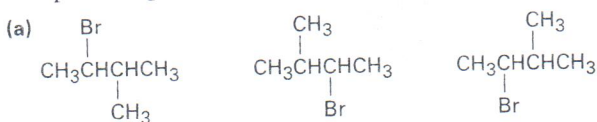
3.25 Prevedere l'ibridizzazione dell'atomo di carbonio in ciascuno dei seguenti gruppi funzionali:

- (a) Chetone (b) Nitrile (c) Acido carbossilico

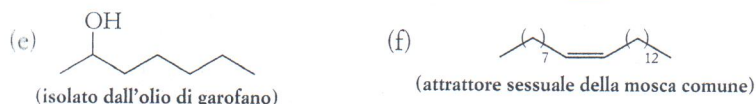
3.26 Disegnare la struttura delle seguenti molecole:

- (a) *Biacetile*, $C_4H_6O_2$, una sostanza dall'aroma del burro; non contiene anelli o legami multipli C-C.
(b) *Etilenimmina*, C_2H_5N , una sostanza usata nella sintesi di polimeri melamminici; non contiene legami multipli.
(c) *Glicerolo*, $C_3H_8O_3$, una sostanza isolata dal grasso ed usata in cosmesi; ha un gruppo -OH in ogni suo atomo di carbonio.

3.29 Nei gruppi di seguito raffigurati, quali strutture rappresentano il medesimo composto e quali invece composti differenti?

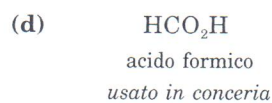
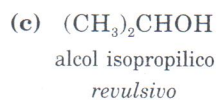
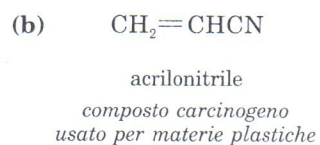
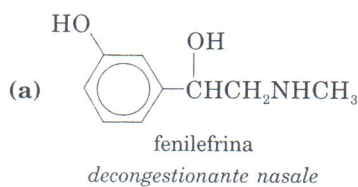
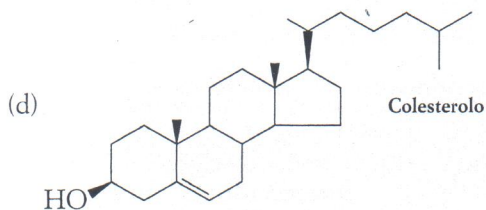
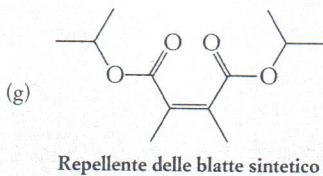
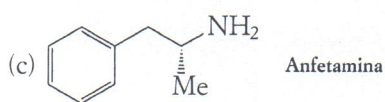
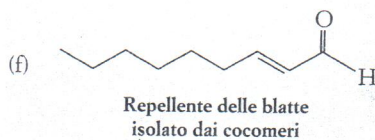
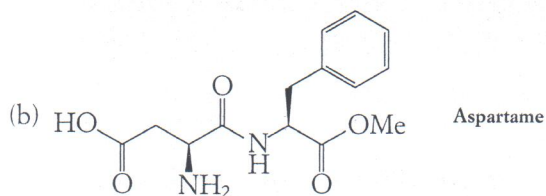
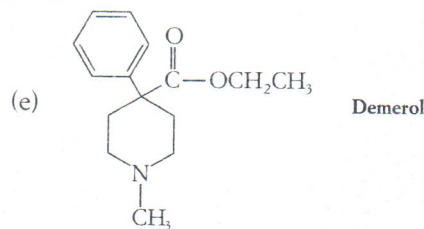
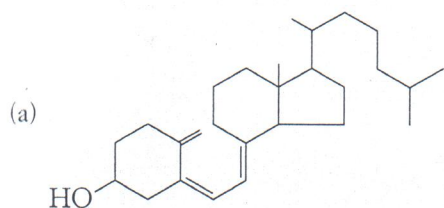


2.20 Tenendo presente la varietà delle classi di composti organici, classificate i seguenti composti come alcani, alcheni, alchini e così via.

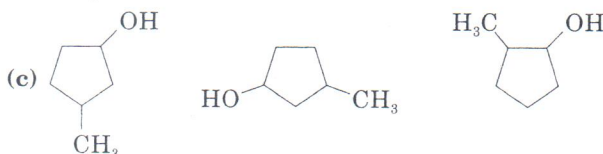
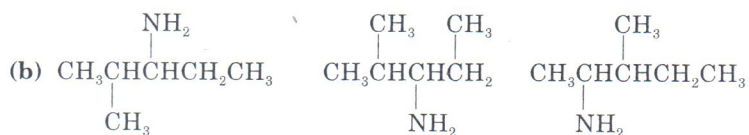
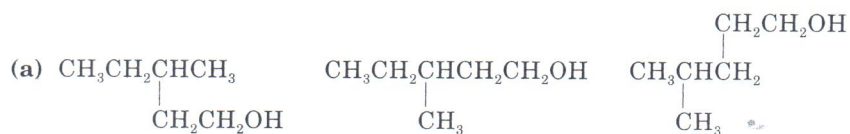


- (a) chetone (b) alchينو (c) alcol (d) aldeide
(e) alcol (f) alchene

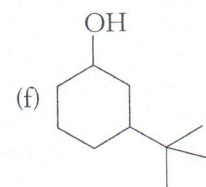
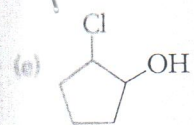
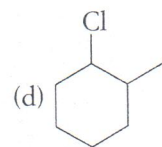
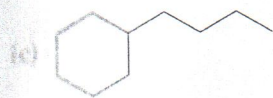
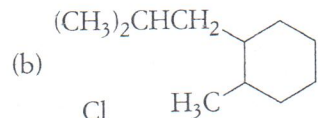
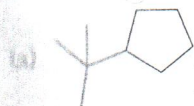
2.21 Identificate tutti i gruppi funzionali presenti in ciascuno dei seguenti composti:



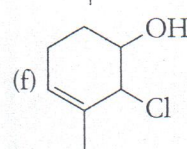
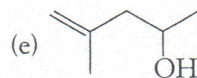
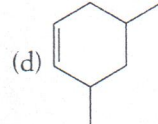
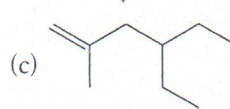
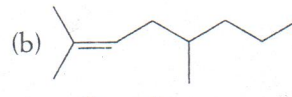
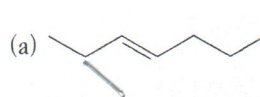
Nei seguenti gruppi di tre strutture, due formule rappresentano un solo composto, e la terza rappresenta un isomero. Identificate le varie strutture.



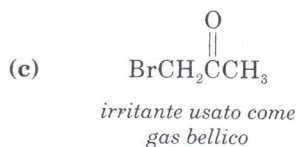
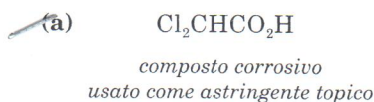
3.30 Scrivete i nomi dei seguenti alcani sostituiti:



4.3 Attribuite i nomi IUPAC ai seguenti alcheni:



3.30 Scrivete i nomi IUPAC dei seguenti composti:



3.22 Scrivete una formula di struttura condensata (o poligonale) per ciascuno dei seguenti composti:

(a) 2,2-dimetilottano

(b) 3,4-dietileptano

(c) 4-etil-2,4-dimetilnonano

(d) 1,3-diisopropilcicloesano

(e) *sec*-butilciclopentano

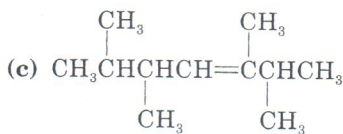
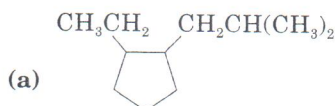
(f) *t*-butilbenzene

(g) isobutilcicloeptano

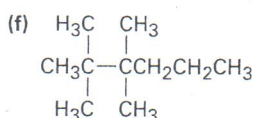
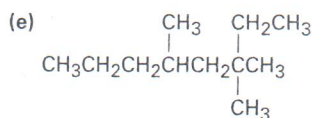
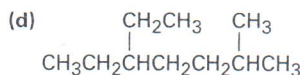
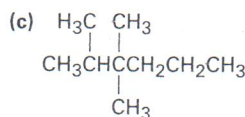
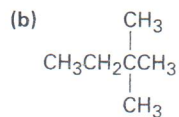
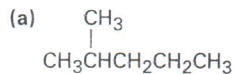
(h) 1-metil-3-pentilcicloesano

(i) 4-isopropileptano

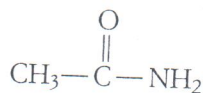
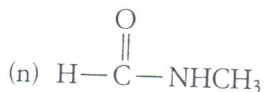
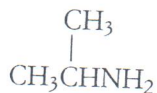
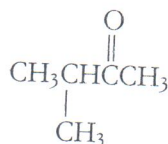
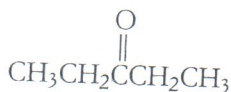
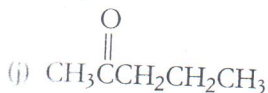
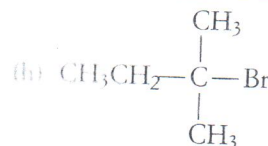
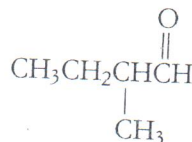
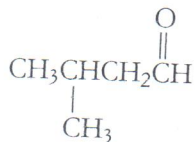
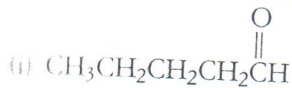
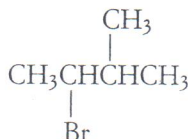
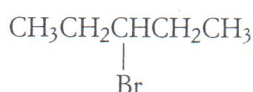
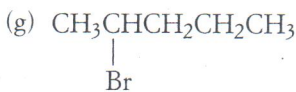
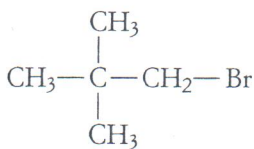
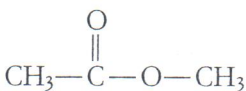
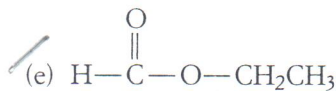
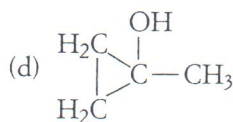
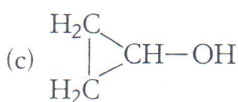
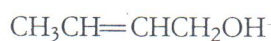
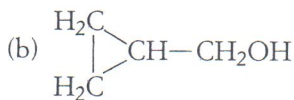
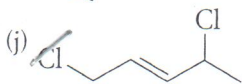
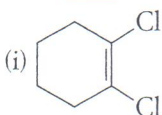
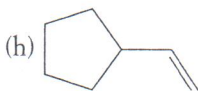
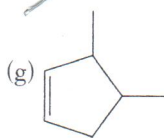
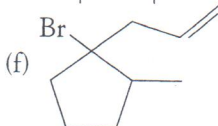
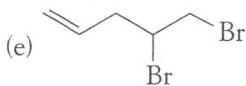
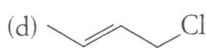
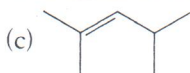
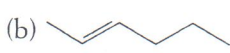
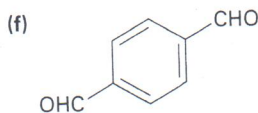
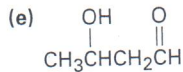
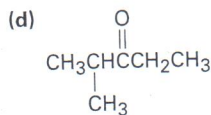
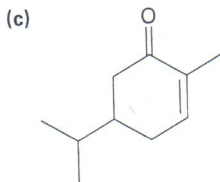
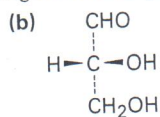
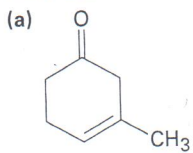
3.23 Scrivete il nome IUPAC dei seguenti idrocarburi:



3.38 Assegnare il nome ai seguenti composti secondo le regole IUPAC:



19.32 Dare il nome IUPAC ai seguenti composti:



Nomenclatura di aldeidi e chetoni

19.30 Disegnare le strutture corrispondenti ai nomi seguenti:

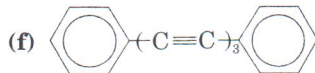
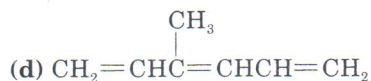
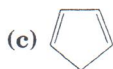
- (a) Bromoacetone
- (b) (S)-2-idrossipropanale
- (c) 2-metil-3-eptanone
- (d) (2S,3R)-2,3,4-triidrossibutanale
- (e) 2,2,4,4-tetrametil-3-pentanone
- (f) 4-metil-3-penten-2-one
- (g) Butandiale
- (h) 3-fenil-2-propenale
- (i) 6,6-dimetil-2,4-cicloesadienone
- (j) *p*-nitroacetofenone

3.27 Scrivete le formule corrispondenti ai seguenti nomi:

- (a) 1-bromo-1,2-difenilpropano; (b) esacloroetano; (c) 2-iodo-1-ottanolo;
- (d) 1,1-dicloro-3-metilcicloesano.

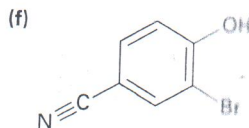
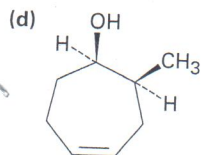
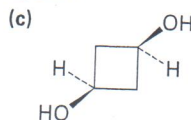
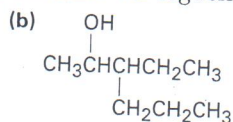
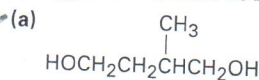
3.28 Dare nomi IUPAC ai seguenti composti:

- (a) $(\text{CH}_3)_2\text{C}=\text{CHCH}_3$ (b) $\text{Cl}_2\text{C}=\text{CHCl}$

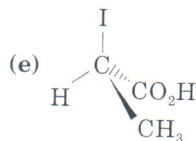
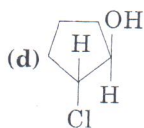
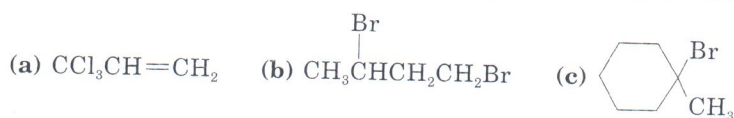


Nomenclatura degli alcoli

17.25 Assegnare il nome IUPAC a ciascuno dei seguenti composti:



5.24 Assegnate ai seguenti composti il nome secondo il sistema IUPAC:

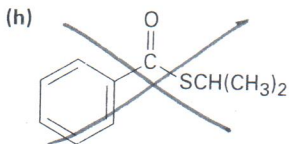
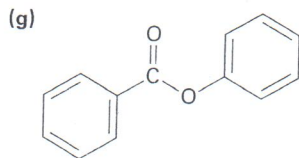
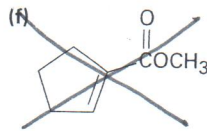
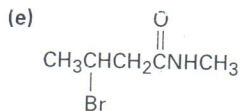
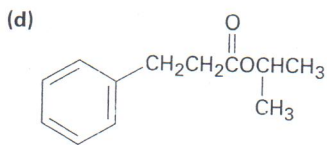
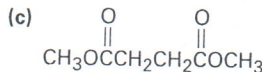
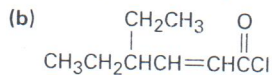
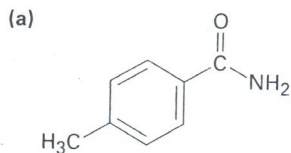


5.25 Assegnate la struttura a ciascuno dei seguenti composti:

- (a) ioduro d'isobutile; (b) 1-iodo-2-metilpropano;
- (c) *cis*-1,3-diclorocicloesano; (d) 2-bromo-3-metil-1-butanolo;
- (e) (2R,3R)-2-bromo-3-clorobutanolo.

Nomenclatura dei derivati degli acidi carbossilici

21.31 Indicare la denominazione IUPAC dei seguenti composti:



21.32 Disegnare le strutture che corrispondono ai seguenti nomi:

- (a) *p*-bromofenilacetammide (b) *m*-benzoilbenzammide
 (c) 2,2-dimetilesanamamide (d) Cicloesil cicloesancarbossilato
 (e) Etil 2-ciclobutencarbossilato (f) Anidride succinica

21.33 Disegnare e denominare i composti che rispecchiano le seguenti descrizioni:

- (a) Tre cloruri acilici con formula $\text{C}_6\text{H}_9\text{ClO}$
 (b) Tre ammidi con formula $\text{C}_7\text{H}_{11}\text{NO}$

20.22 Disegnare le strutture corrispondenti ai seguenti nomi IUPAC:

- (a) Acido *cis*-1,2-cicloesandicarbossilico (b) Acido eptandioico
 (c) Acido 2-esen-4-inoico (d) Acido 4-etil-2-propilottanoico
 (e) ~~Acido 3-cloroftalico~~ (f) Acido trifenilacetico
 (g) ~~2-ciclobutencarbonitrile~~ (h) ~~*m*-benzoilbenzonnitrile~~

20.23 Disegnare e denominare:

- (a) Gli otto acidi carbossilici con formula $\text{C}_6\text{H}_{12}\text{O}_2$
 (b) I tre nitrili con formula $\text{C}_5\text{H}_7\text{N}$

20.24 Il pregabalin è un farmaco anticonvulsivo utile anche per il trattamento del dolore cronico. Il suo nome IUPAC è acido (*S*)-3-(amminometil)-5-metilesanoico (il gruppo amminometile è $-\text{CH}_2\text{NH}_2$.) Disegnare la struttura del pregabalin.

20.25 L'acido isocitrico, un intermedio nel ciclo dell'acido citrico del metabolismo alimentare, ha il nome sistematico di acido (2*R*,3*S*)-3-carbossi-2-idrossipentandioico. Disegnarne la struttura.

Nomenclatura degli acidi carbossilici e dei nitrili

20.21 Scrivere i nomi IUPAC dei seguenti composti:

